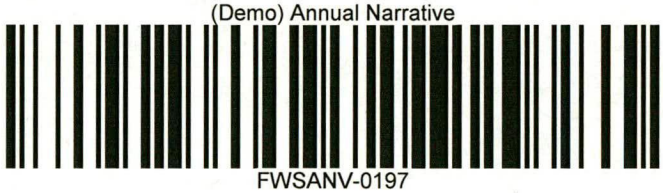
(Demo) Annual Narrative



FWSANV-0197

Malheur National Wildlife Refuge

Burns, Oregon

Narrative Report for period September 1 to December 31, 1950

Roster of Regular Personnel

John C. Scharff	Superintendent
Ray C. Erickson	Biologist
Marselle Leake	Supt. of Construction
Kenneth W. House	Refuge Mechanic
Alfred S. Ludi	Refuge Maintenance Man
Noel L. Cagle	Refuge Maintenance Man
Gladys V. Howe	Clerk
Albert Olofson	Refuge Maintenance Man
Judd A. Wise	Refuge Maintenance Man
Frank McElhone	Refuge Maintenance Man
John Porter	Refuge Maintenance Man
Elmer Ash	Dragline Operator
Lynn Comegys	Oiler

Temporary Personnel

~~Deforest Thompson~~	Laborer
John A. Younger	Laborer
Stanley K. Gibson	Laborer
~~John Parker~~	Laborer
Kenneth Meservey	Trapping Inspectr

Table of Contents

Malheur National Wildlife Refuge
Third Period Narrative Report
September 1 to December 31, 1950

I GENERAL

A. Weather Conditions:

The following is a summary of weather records maintained at the Malheur Refuge headquarters:

	Precipitation		Max. temp.	Min. Temp.
September	.02		100	18
October	.40		84	12
November	1.09		68	8
December	3.10		58	12
Totals	4.61	Extremes	100	8

Precipitation recorded at the P-Ranch, Diamond and Double O Ranch refuge stations was as follows:

	Precipitation		
	P-Ranch	Diamond	Double O
September	.09	.35	.00
October	1.07	.73	.17
November	1.10	1.50	3.21
December	2.58	2.26	2.54
Totals	4.84	4.84	5.92

The first three months of the present period were characterized by very windy, dry weather, but in December 3.10 inches of precipitation were recorded at the refuge headquarters weather station. This nearly doubles the previous December precipitation record of 1.57 inches in 1939. The total precipitation for 1950 was 8.71 inches, or about 0.69 inches short of the previous 10-year average. Most of the precipitation fell as rain and the sustained cloudiness aided in holding the moisture.

The annual temperature showed greater extremes than the 10-year average. For 1950 the extremes were 100 degrees and a minus 16 degrees. The 10-year averages are, respectively, 95.7 degrees and minus 8 degrees.

B. Water Conditions.

Maximum and minimum surface elevations of Malheur Lake recorded during the period were, respectively, 4091.40 feet above sea level on December 24 and 4090.85 feet a.s.l. on October 3, a range of 0.55 feet. Although this range in levels seems small it resulted in a substantial decrease in surface acreage of about 6,000 acres of an already shrunken water body. At the minimum elevation, the lake had an estimated area of about 17,000 acres, the lowest level recorded since 1947 when a level of 4090.84 feet a.s.l. occurred.

These were the lowest levels since 1940 when a reading of 4090.44 feet a.s.l. was made.

Although some ice was formed in late November and early December on Malheur Lake, at no time was the ice thick enough for safe foot travel during trapping. In addition, the lack of an ice blanket allowed the loss of more water so that the lake was slow in recovering in late fall in spite of a moderate flow of water from the Blitzen River.

The meadows remained very dry throughout the fall but should have been in good condition at the end of the period as a result of the record December precipitation. On most ground the frost has not yet penetrated more than an inch or two, so the moisture has had ample opportunity to seep in rather than to run off.

C. Fires.

No uncontrolled fires were reported on refuge land during the period.

II WILDLIFE

A. Migratory Birds.

1. Populations and Behavior.

Following reduced breeding numbers of waterfowl, the fall migration was even less in proportion to last year's autumn populations involving a reduction of about 25 percent among the waterfowl and over 30 percent with coots. The low water conditions on Malheur Lake during the breeding season were followed by a progressive shrinking of the shoreline throughout most of the fall migration, and it wasn't until late October or early in November that the lake began a slow recovery. It is felt that the reduced use of Malheur Refuge this fall was in part a response of the low water on Malheur Lake for in the Blitzen Valley, where water conditions were nearer average, the numbers were equal to or slightly greater than those of 1949. As the cold weather held off about two weeks longer than usual, it will be noted that the departure dates show a corresponding retardation.

Whistling Swan. Judging by the arrival dates of most species of waterfowl, including the swans, the northern breeding grounds also experienced a late breeding season or mild autumn, or both. The first swans were seen on September 15. At the close of the period about 50 still were occupying the remaining open water of the refuge.

Trumpeter Swan. At the beginning of the period the trumpeter flock at Malheur numbered 16 birds, three of which were confined in the spring below refuge headquarters, and the remainder in the large spring on the Double O Ranch. A single trumpeter loss occurred on or about October 1 when an emaciated female, which had withdrawn from the rest of the flock and which had been remaining in a cat-tail stand, died on the shore.

Decomposition of the carcass was so advanced that it was impossible with available equipment to diagnose the cause of death, but it is likely that avian tuberculosis again was responsible. There were no external indications of predatory attack.

During the period, an attempt was made to eliminate the predator hazard as much as possible. About 100 feet of woven wire fence was built around and out from the rocky rim near the southwest end of the pond. Formerly, this rim had been used as part of the enclosure barrier, but since mammalian predators could scale it without great difficulty, the fence was substituted. The fence cannot be considered a serious barrier to bobcats, however, for they easily could jump over it if they desired to do so. In fact, one medium-sized bobcat trapped along the fence squeezed through the mesh and was found on the opposite side of the fence from the trap and drag.

It seems, therefore, that the most praticable method of protecting the trumpeters in the Double O Ranch enclosure is through a concerted predator-suppression program. Mr. E. C. Stoneman, local Predator Control representative for the Fish and Wildlife Service, was contacted early this fall regarding this problem. He set a number of traps and "coyote-getters" and later set out some "1080" and strychnine poison stations. This work has produced noticeable results in reducing the numbers of these predators. The low ebb in local black-tailed jackrabbit populations may have been an important influence in the movement of bobcats and coyotes from the upland to the watercourses. This shift is an annual occurrence, but it is much more pronounced this fall and winter and could result in greater danger to the Double O Ranch swans if not checked. In addition to ground work on predator control, aerial hunting also being done and Mr. Stoneman feels confident that very few of the larger predators will remain on the control area by late winter. Incidental with the coyote-poisoning with "1080" the raven population also will decrease greatly before the 1951 nesting season.

Geese. Canada geese were between 10 and 15 percent fewer this fall than in 1949. The extremely dry fall and reduced green meadow forage, as well as the low water condition of Malheur Lake, provided little inducement in attracting customary numbers of geese. With mild weather prevailing until the end of the period, a greater-than-usual number of Canada geese were on hand at the end of the year.

White-fronted geese appeared in about customary numbers, but lesser snow geese were 25 percent fewer than during last fall. With plenty of open water in the Double O Ranch area throughout the prolonged autumn, snow geese remained about two weeks longer than usual.

Ducks. The decline in waterfowl numbers was most noticeable with the dabbling species. Baldpates showed the most outstanding decrease of about 35 percent of their 1949 fall migration numbers. Mallards were reduced about 25 percent, shovellers down about 15 percent, while pintails, gadwalls, cinnamon teal and green-winged

teal remained about the same. Among the diving ducks, redheads were reduced about 20 percent; ruddy ducks, canvas-backs, and lesser scaups about 15 percent; and buffleheads about 10 percent. As earlier indicated, these declines involve only an appraisal of the Malheur Refuge populations which may stem from decreased attractiveness of the local habitat rather than any decline in the waterfowl of the Pacific Flyway.

American Coot. The reduced numbers of coots was most readily seen on Malheur Lake. It appears that coot populations are more directly responsive to changes in water acreages of Malheur Lake than any other of the aquatic game birds. In the Blitzen Valley, however, coots were about 10 percent more abundant than last year. Since the habitat of this part of the refuge remains largely the same from one fall to another, except for variations in the availability of green meadow forage, it might be used as a control plot for the measurement of utilization of other parts of the refuge, such as Malheur Lake, by waterfowl. However, this may not be entirely accurate, since there may be a shift in utilization by waterfowl of areas of reduced value during certain years to the Blitzen Valley, thus giving an exaggerated impression of the utility of the latter area unsupported by a general increase in birds.

Sandhill Crane. After a very successful nesting season on the Malheur Refuge, the late summer and fall migration concentrations appeared about 20 percent greater in number than during the previous year. The last record of cranes was a group of five seen on one of the Grain Camp fields on November 11.

Water and Marsh Birds. There was no observed change in the status of the grebes this fall. The numbers of pelicans, cormorants, herons, egrets and bitterns also appear unchanged.

Shorebirds, gulls and terns. The recession of the shoreline of Malheur Lake late in the summer and early fall with the resulting exposed mud flats attracted large numbers of shorebirds which equalled the numbers seen in 1949. Wilson's snipes again showed a decline of about 10 percent. California gulls were slightly less abundant, as were Forster's and black terns.

2. Food and Cover.

Two important sources of food for waterfowl were greatly reduced this year. The shrunken Malheur Lake lost about 60 percent of its most valuable marginal submergent vegetation which emerged as mud flats, and most of the meadows throughout the refuge remained dry and brown because of inadequate fall precipitation. Emergent vegetation made a good growth, as usual, and most potential nesting vegetation seems to be in good condition at this time.

Wild millet which again was planted at several locations in the Blitzen Valley this year made very vigorous growth and progressed to the fruiting stage. It grew most thriftily on fresh-water areas, but

on ground containing much dissolved salts, it turned reddish and remained stunted. Although it was thrifty in growth and began to fruit, some light frosts in early fall prevented the ripening of the fruiting heads, and seed specimens taken from a large number of plants and later tested for germination were found to be not viable. None of the seeds were well filled out so it appears that ripening had not been completed before the damaging frost had occurred. Millet occurring as weeds in the grain fields also contained no observed mature seeds, so it appears that the growing season in this locality is too short for millet to become an important source of food for waterfowl during average weather years. The green millet growth was heavily utilized by ducks and geese during July and August, so it is to be regretted that this valuable plant cannot be extensively propagated on and near our water areas.

3. Disease.

No botulism casualties were observed during the period.

4. Lead-poisoning.

No mortality definitely known due to lead-poisoning was observed. One juvenile canvas-back in the vicinity of the boathouse on the Blitzen River seemed very listless or semi-paralyzed, and may have been suffering from lead-poisoning.

5. Banding.

No waterfowl were banded during the period.

B. Upland Game Birds.

1. Populations and Behavior.

Ring-necked pheasant. Following the haying season, pheasants appeared common throughout most of the refuge, and especially, in the south third of the Blitzen Valley. The open winter has provided no hardship for upland game so far and no supplementary grain feed has been provided yet.

European partridge. A slight decrease in numbers of "Huns" this fall is noted. Most coveys have appeared again this winter but in reduced numbers.

Valley quail. Quail are also slightly below their 1949 numbers but their distribution has remained the same.

Sage hen. These grouse were again locally abundant this year and sportsmen had a very successful season hutning them. The annual sage hen exodus from the refuge to the short sage flats was largely completed by the middle of November this year.

2. Food and Cover.

Food and cover conditions are very good for all species of upland game and no emergency fedding has been undertaken during the period.

3. Disease.

Sportsmen have reported finding emaciated and partially paralyzed sage hens from time to time during the fall, but none has been available for examination. Other upland game birds seem to have been in very good condition.

C. Big Game Animals.

1. Populations and Behavior.

Antelope. Fifteen hundred antelope hunting permits were issued by the Oregon State Game Commission to hunter-applicants this fall, the season extending from August 19-25. The number of antelope this year was similar to local populations for 1949.

Mule deer. About 1200 deer were in the Blitzen Valley after the close of the hunting season. Many had moved out by the first part of December and by the close of the period around 300 remained on the refuge. Few deer have been coming in for grain rations at the P-Ranch granary, indicating that the open winter has kept available plenty of browse in the Blitzen Valley and on the flats.

D. Fur Animals, Predators, Rodents, and other Mammals.

Muskrats. At the time that recommendations for the 1950-51 fur harvest were prepared late in October, little sign of muskrat activity was evident over most of Malheur Lake, and it was decided that the current lower population of muskrats required a reduction in the number to be taken this year. Last year eight permits of 2,000 muskrats each were issued, the refuge superintendent being empowered to increase this quota 25 percent. As one trapper completed his quota early and his trapping unit still had a trappable surplus of muskrats, he was given permission to trap an additional 1,000 muskrats. Nearly 17,000 muskrats were taken on Malheur Lake in 1949-50.

With the present lower population, plans have been made to trap only about 12,000 muskrats. Whether or not this goal will be reached is doubtful since practically all of the December trapping has been frustrated by ice too thick for boat travel but unsafe to walk upon. Consequently, only three trappers have had any success in reward for their efforts, and only about 2,500 muskrats have been taken by the end of December.

Another obstruction to the success of the fur harvest is the dearth of dependable trappers available locally. Of eight issuable permits only six suitable trappers have been found for work on Malheur Lake. In order to take the desired number of muskrats it may be necessary to extend the original permits and allow the trappers to work over previously untrapped units or to take additional muskrats in units that contain surpluses following removal of the original quota.

Few furs have been sold so far and they have averaged about $1.25 per pelt as compared with about $.70 per pelt at this time last year. The mink fur market also seems to have improved somewhat.

Beaver. Permission again has been given by the Oregon State Game Commission for the refuge trapper to take at least 30 beavers on Malheur Refuge. Nineteen of them had been caught by the end of the period and the remainder should be taken within the next month.

Mink. The intensive mink-trapping of last winter seems to have been effective in reducing their numbers for fewer have been taken so far this season. Trapping of mink was delayed until December in order to allow the furs to become prime. The pelts are preponderantly "paper-skinned" this year so the value is expected to be relatively low. It is expected that from 75 to 100 minks will be trapped this season.

Porcupines and other species. Porcupines have declined slightly, but black-tailed jackrabbits and cottontails are present in less than 10 percent of their 1949 numbers. Many jackrabbits were found dead in the sagebrush last spring after having reached their peak of abundance. They began to recover during the summer, but this fall and winter seem to have experienced another, but lighter, die-off. Where previously two dozen of rabbits could be seen on the lawn or in the road, now only two or three are found. The case of the die-off is not known, but it has affected both jackrabbits and cottontails.. In addition, field mice have decreased greatly.

E. Predaceous Birds, including Crows, Ravens and Magpies.

Crows remained about the same in numbers this year. Magpies increased somewhat during the summer but still are about 15 percent short of 1949 numbers. Ravens became very common about Malheur Lake during the fall but again have dispersed. The "1080" poisoning of coyotes apparently again is taking its toll of ravens.

F. Fish.

No fish were planted during this period and none were caught since the season on trout closed in September.

III REFUGE DEVELOPMENT & MAINTENANCE

A. Physical Developments.

Soil and Moisture Program.

During the period 192 sq. yds. of revetment work was completed, cement and fill work accomplished on seven dams, and 2600 cu. yds. of earth moved into dikes. Some 500 yds. of revetment work is yet required to place the dams in shape for operation.

Dragline Project.

The dragline crew moved a total of 60,557 yards of soil, cleaned

18 miles of lateral ditches, bladed 9 miles of road and installed 1-24" pipe and headgate. This work all took place in the upper Blitzen Valley. Later in the period considerable yardage was lost by virtue of having to work on mats.

Equipment Repair Work Accomplished.

International pickup, I-16157 was given a brake job, 5,000 mile tune up and other adjustment work performed to bring this vehicle to good operating condition.

Chevrolet Dump Truck I-16185 was given a motor job, brakes relined and other work done to bring it to good operating condition.

The truck trailer unit I-18366 was given a good overhaul. A new third gear was installed in transmission and all ten wheels removed and new hydraulic cylinder cups installed. A 90 gallon gasoline tank was built and mounted on unit. Repairs on trailer were performed and all wheels repacked. Eighteen new tires were mounted on unit.

International pickup I-16153 was given a valve job and other major repair work.

Practically all refuge vehicles and tractors were worked upon during the period as well as light plants and other motors.

Building Repair.

In the carpenter department most of the time was spent on farm and concrete work under the Soil and Moisture program.

Maintenance Man McElhone completed the P-Ranch painting of buildings and installed a 100 gallon fuel tank for use of the P-Ranch dwelling.

Weather stripping was done on the Double O dwelling and porch lights installed for use of the Sod House apartments.

A new roof was placed on the Kado yard lumber shed.

Other Repair Work and Construction.

Two and one half miles of new interior fence was constructed and two miles of interior fence was completely rebuilt.

Two miles of old interior fence was razed and materials salvaged.

In addition an increased amount of ordinary fence maintenance was required which may be expected as the fences become older.

A steel grain bin of 2,000 bushel capacity was installed at the Buena Vista station.

The refuge telephone system came in for quite a bit of repair and the poles were moved and reset for a distance of two miles to move the line out of the ponds about the Witzel Patrol station. It is estimated that the time of two men for at least two weeks will be required during the spring to place the telephone system in good working order.

Over thirty beaver dams were blown from the canals and streams in the Blitzen Valley area during the period. The river channel was cleaned of drifts from the P-Ranch to Bridge Creek. It has been found that the common dehorning disinfectant KRS provides a good beaver repellant for a time. The best success seems to be derived from saturating an old wool garment or blanket and hanging it near or over the dam removed. During the past summer this repellant worked in every case tried. Refuge Maintenance Man Olofson gets the credit locally for the discovery.

The Krumbo water control pipes going into the river were dug out and reset during November. The dragline crossing at an earlier date caused these pipes to become disconnected and washed around.

The refuge grain was harvested and usuals transfers made to other refuges in the region.

B. Plantings.

Cultivated Crops.

No fall planting was undertaken this period.

Generally cultivated crops were average or above, but some frost damage was experienced on all grain.

IV ECONOMIC USE OF REFUGE

A. Grazing.

The carrying capacities of the various units of the Malheur Refuge were much improved where straight pasture is depended upon, but in some instances the bunched hay was somewhat damaged by the continued wet weather and stock didn't graze so heavily on this class of feed until late in the period. It now appears that most fields will produce forage equal to or in excess of the allowable use as provided for in the economic use plan.

Upwards of a hundred grazing permittees are using the refuge and about ten percent of the entire cattle grazing of Harney County comes from the Malheur Refuge.

V FIELD INVESTIGATION OR APPLIED RESEARCH

A. Progress Report.

1. Major Projects.

A. Determination of Responses of Waterfowl to Various

Agricultural Practices on the Malheur Refuge.

A detailed report on this subject is nearing completion and will be submitted shortly.

B. Habitat Utilization and Improvement.

Development work on the Double O Ranch Unit has continued in the way of additional headgates to facilitate the distribution of water in that area. The work in this area has brought a more noticeable and rapid response in increased utilization by ducks and geese than can usually be expected. The holding of water in some of the larger ponds later than usual attracted and held larger numbers of ducks than last year. It is expected that the production of waterfowl plant foods will increase with the more stable water conditions, and such valuable species as alkali bulrush, Nevada bulrush and American three-square bulrush will continue to spread along the margins. Hardstem bulrush also is becoming more abundant and is expected to provide nesting cover for increasing populations for those species nesting over water.

The new impoundment completed a year ago and located just to the north of Frenchglen in Unit 2 was visited periodically during the past year in order to learn of possible utilization by waterfowl. One duck brood was seen in the borrow pit near the north end of the impoundment, but it is not known whether or not the brood was hatched on the area. The borrow pits are unvegetated, as well as the spoil banks, and establishment of cover on the dike and submerged vegetation in the borrow pits may be expected to take several years.

C. Trumpeter Swan Project.

Information on this subject has been included in an earlier section and in a special report submitted in October, 1950.

D. Muskrat Management and the Fur Harvest.

Work on this project formed the basis for preparation of the Basic Fur Plan and the Fur Harvest Quotas for Malheur Refuge, as well as an earlier section in this report on the subject.

VI PUBLIC RELATIONS

A. General.

Both recreational and business visitors showed a marked increase during the period. The Harney County Chamber of Commerce stressed the Malheur Refuge in their publicity work at the County, State and Pacific International Fairs and more visitors come to the area than usual and more inquiries were received regarding the wildlife of the refuge and the surrounding countryside than normally.

B. Refuge Visitors.

Official visitors and those of special note during the period were as follows:

September 1	Milton Cummins, Biologist, Ore. State Game Dept. Ellis Mason " " " " " Boyd Claggett " " " " "
September 15	Ross Hanson, Pilot-Biologist, Sacramento Refuge
September 19-22	Henry H. Sheldon, Photographer, Portland, Ore.
September 22	Dr. and Mrs. T. Eric Reynolds, Audubon Photographer San Francisco, Calif.
September 26	Jas. Young, Asst. Director, Travel Information Dept., Ore. State Highway Commission Walter Meacham, Old Oregon Trail, Inc.
September 27	F. Sheldon Dart, Refuge Manager, Deer Flat Refuge Nampa, Idaho Norman Minnick, Biologist, Ore. State Game Dept.
September 28	Mr. Leo Couch, Regional Office, Portland, Ore. "Jack" Frost, Ore. Coop. Snow Surveys, Medford
October 4-5	Oscar Demming, Biologist, Desert Game Range, Nevada
October 11	Maintenance Man Sanders, Camas Refuge, Idaho
October 17	"Jack" Welling, Ruby Valley Refuge, Nevada
October 17-18	Carl B. Neal, Forest Supervisor, Olympia, Wash.
October 18	Ross Hanson, Pilot-Biologist, Sacramento Refuge Maint. Man Proctor, Turnbull Refuge, Wash.
October 19-22	U. S. Senator Guy Cordon, Roseburg, Ore. Cliff Thornton, Lumberman " "
October 25	R. O. Gustafson, Equip. Engineer, Washington, D. C. Cecil Williams, Chief, Waterfowl Management Invest. R. S. Schmidt, Biologist " " "
October 27-28	K. F. MacDonald, Regional Refuge Supervisor, Portland, Ore.
October 29-30	W. F. Kubicheck, Photographer, Washington, D.C.
November 2	Lee R. Jacoby, Engineer, Regional Office, Portland
November 21	E. C. Stoneman, Predator Control, Burns, Ore.

December 2-4	Jas. Cromwell, U. S. Game Mgmt. Agent, Pendleton, Ore.
December 3-5	Jas. Barnum, Maint. Man, Desert Game Range, Nevada
December 27-28	Chas. Rouse, Biologist, Lakeview, Ore.
December 27	Russell Wilson, Bison Range, Montana

C. Refuge Participation.

During October 13-14 Superintendent Scharff was in Lakeview, Oregon, assisting D. E. Woodward and others toward a desirable settlement of the Warner Valley situation.

Several meetings of the Harney County Chamber of Commerce and Harney County Chapter of Izaac Walton League were attended during the period.

During September 15-17 an exhibit of wildlife was had by the Refuge at the Harney County Fair. Two of the Texas longhorn steers were also exhibited. These steers attracted a lot of attention along with the Hereford cattle exhibits.

Colored slides and pictures were loaned for use of the Harney County Chamber of Commerce in their exhibits at the Harney County, Oregon State and Pacific International Fairs. It is felt that much advertising of the refuge was accomplished in this manner.

D. Hunting.

From reports not yet substantiated by the State Game Department it appears that the deer kill was short of the 1949 season. At the present writing there is much controversy over the management of the state deer herds but locally the deer numbers seem to be maintaining themselves in excellent shape.

Owing to short water conditions the Malheur Public Shooting areas were not opened during the past waterfowl season.

E. Fishing.

Late fishing on and immediately adjacent to the refuge seemed good but very few anglers were present to enjoy it.

F. Violations.

No apprehensions of violators were made during the period.

VII OTHER ITEMS

A. Items of Interest.

From October 29 to November 1, W. F. Kubichek, Service Wildlife Photographer, visited the Refuge for pictures, but met with little

success because of weather conditions. Storm and overcast weather prevailed most of the time he was here.

On November 11 Dr. Ray C. Erickson conducted a tour of the refuge for Dr. Ruth Hopson and a dozen extension students from the Bend-Madras area. In the evening the group was shown a number of colored slides of refuge animals, habitat and activities.

On November 17 Dr. Erickson gave an illustrated talk on waterfowl food resources of south eastern Oregon to the wildlife food crops class at Oregon State College.

December 17-20 was spent by Superintendent Scharff in making a trip into the Regional Office for conferences on personnel and administrative matters.

Anthony Opsterdal of Regional Office visited the refuge during October 20-23 and done some much needed surveying for dike and canal work.

During the period of October 23-26 Superintendent of Construction, Marselle Leake, took the Malheur cement mixer to the Sheldon Refuge and assisted in pouring a cement structure at the IXL Ranch.

Early in December a roto tiller was received from Salton Sea Refuge for use in breaking up new swamp lands for farming purposes. The action of this machine on tule lands is an unknown quantity at this time.

November 7-10 was spent by Marselle Leake in hauling Malheur road maintainer to Sheldon Refuge and bringing Sheldon D-7 to Malheur for work at this location. While on Sheldon the Dufurrena water system was overhauled and light plants checked.

On December 19 a carload of 650 sacks of cement was unloaded and hauled to the refuge.

J. C. Scharff
Superintendent

January 11, 1951

_____
Approved

Fig. 1 Antelope fawn about four months old at refuge headquarters. 9/19/50 RCE 50 09 FP 002 11

Fig. 2 Animal photographer Henry H. Sheldon photographing antelope fawn. 9/19/50 RCE 50 09 FP 002 12

Fig. 3 & 4 Sheep watering at pond 1 mile northeast of Fish Lake, Steens Mts.
9/4/50 RCE 50 09 FP 001 02
RCE 50 09 FP 001 05

Fig. 5 Members and guests of the Sunrise Garden Club visiting Malheur Refuge headquarters 8/31/50 RCE 50 08 FP 001 09

Fig. 6 Stacking hay in the P-Ranch area using a "farm-hand" type of stacker. 9/1/50 RCE 50 08 FP 001 12

Fig. 7 Combining barley in the Suicide Swamp Field, Malheur Refuge. 9/14/50 RCE 50 09 FP 002 06

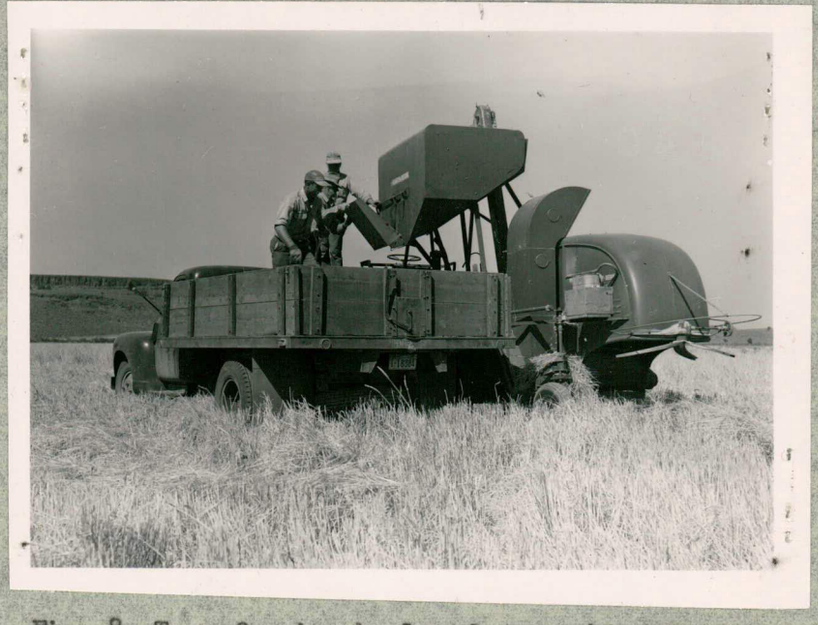


Fig. 8 Transferring barley from combine to dump truck. 9/14/50 RCE 50 09 FP 002 07

Figs. 9 & 10 Filling metal grain storage bin with the use of a grain auger, Malheur Refuge, 9/14/50
RCE 50 09ER002 08
RCE 50 09 FP 002 10

Figs 11 & 12 Before and after shots of concrete headgate on the Double O Ranch Unit, Malheur Refuge, 8/28/50
RCE 50 08 FP 001 06
RCE 50 08 FP 001 07

WATERFOWL

Refuge Malheur Months of September to December 194/50

(1) Species		(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
	Common Name	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I.	Swans:									
	Whistling swan			4,000	10/28	300	12/31			12,000
II.	Geese:									
	Canada goose	—		12,500	10/25	2,500	"			40,000
	Cackling goose			600	10/28	25	"			4,000
	Brant									
	White-fronted goose			800	10/23	5	11/30			4,000
	Snow goose	10/2	50	20,000	10/23	50	12/10			30,000
	Blue goose									
III.	Ducks:									
	Mallard			90,000	9/10	6,000	12/31			300,000
	Black duck									
	Gadwall			35,000	9/5	2,000	"			80,000
	Baldpate			15,000	11/10	3,500	"			100,000
	Pintail			90,000	9/10	1,500	"			200,000
	Green-winged teal			9,000	10/28	15	"			25,000
	Blue-winged teal			50	9/30					300
	Cinnamon teal			9,000	9/1	2	10/15			20,000
	Shoveller			4,000	9/8	50	12/31			35,000
	Wood duck									
	Redhead			6,000	9/5	10	"			25,000
	Ring-necked duck			200	12/5	20	"			800
	Canvas-back			8,000	10/28	50	"			20,000
	Scaup			8,000	12/1	1,000	"			35,000
	Golden-eye					500	"			8,000
	Buffle-head					400	"			10,000
	Ruddy duck			5,000	9/25	800	"			12,000
	Am. Merganser			300	12/1	30	"			700
IV.	Coot:			200,000	9/1	8,000	"			350,000

3-1750
(July 1946)

(over)

Form NR-1

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 1,306,800

Peak waterfowl numbers 425,000

Areas used by concentrations Malheur Lake, 00 Ranch, Boca Lake

Principal nesting areas this season _____

Reported by R. C. Erickson
R. C. Erickson, Biologist

INSTRUCTIONS

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.

(2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.

(3) Peak Concentration: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.

(5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

2338

3-1751
Form NR-1A
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge Malheur Months of September to December 1950

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Eared grebe			4,000	9/1	3	11/15				7,000
Western grebe			3,000	"		12/15				5,000
Pied-billed grebe			2,000	"		12/20				3,000
White pelican			2,000	"		12/5				2,500
Farallon Cormorant			1,000	"		12/5				4,000
Treganza's heron			450	"		12/31				600
American egret			250	"		12/31				350
Brewster's egret			150	"	1	11/20				150
B-cr night heron			1,200	"		11/25				1,600
American bittern			800	"		12/10				1,000
Sandhill crane			1,000	9/15	5	11/11				1,800
II. Shorebirds, Gulls and Terns:										
Killdeer			1,500	9/1	3	12/4				4,000
Long-billed curlew			200	"						600
Western Willet			10	"						20
Avocet			3,000	"	10	11/25				5,000
California gull			7,000	"	2	12/5				9,000
Ring-billed gull			2,000	"						3,000
Franklin's gull			12	"						12
Forster's tern			8,000	"	3	11/15				15,000
Caspian tern			10	"						10
Black tern			4,000	"		10/31				8,000

(over)

(1)	(2)	(3)		(4)		(5)	(6)
III. Doves and Pigeons:							
Mourning dove		2,000	9/1	1	11/12		6,000
White-winged dove							
IV. Predaceous Birds:							
Golden eagle		24		residents			30
Duck hawk							
Horned owl		30		"			
Magpie		2,000		"			2,500
Raven		600		"			1,000
Crow		600	±				700
Swainson's hawk		40	9/1	1	12/31		100
Red-tailed hawk		14		residents			16
Am. rough-leg		100	11/25		12/31		300
Ferruginous rough-leg		10	9/1		12/31		25
Bald eagle				winter visitor			

Reported by R. C. Erickson

R. C. Erickson, Biologist

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

1613

Refuge Malheur Months of September to December, 1950

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked pheasant									3,500	
Valley Quail									500	
European Partridge									50	
Sage hen									250	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

Form NR-3

BIG GAME

Refuge Malheur Year 194/50

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population as of Dec. 31	(8) Sex Ratio
Common Name	Cover types, total Acreage of Habitat	Number	Hunting	For Re-stocking	Sold	For Research	Predation	Disease	Winter Losses	Number	Source		Percentage
Mule deer												325	
Antelope												20	

INSTRUCTIONS

Form NR-3 - BIG GAME

(1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.) exclusive of fenced herds. Detailed data may be omitted for species occuring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated total number of young produced on refuge.

(4) REMOVALS: Indicate total number in each category removed during the year.

(5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.

(6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.

(7) TOTAL REFUGE POPULATION: Give the estimated population of <u>each species</u> on the refuge as of December 31.

(8) SEX RATION: Indicate the percentage of males and females of each species as determined from field observations or through removals.

Form NR-5 DISEASE 1616

Refuge Malheur Year 1950

Botulism

Period of outbreak Sept. 1-30, 1950

Period of heaviest losses Sept. 5-15, 1950

Losses:

	Actual Count	Estimated (aerial)
(a) Waterfowl		150
(b) Shorebirds		none seen
(c) Other		none seen

Number Hospitalized	No. Recovered	% Recovered
(a) Waterfowl		
(b) Shorebirds		
(c) Other		

Areas affected (location and approximate acreage)

About 2 mi. of shoreline towards SE end of Grave's Point and in ½ acre mineral spring in Harney Lake bed.

Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.

Water low and many muddy flats exposed.

Condition of vegetation and invertebrate life normal

Remarks The lake water and vegetation remained unusually fresh in appearance and the algal growth was much less than usual.

Lead Poisoning or other Disease

Kind of disease

Species affected

Number Affected Species	Actual Count	Estimated

Number Recovered

Number lost

Source of infection

Water conditions

Food conditions

Remarks

Form NR-6 FISH 1617

Refuge Malheur Year 1950

Species	Relative Abundance	Sport Fishing		Commercial Fishing		Restocking		Number removed for Restocking
		Man days Fishing	Number Taken	No. of Permits	Pounds Taken	Number Stocked	Area Stocked	
Rainbow trout	Fair	150	300			1500*	Blitzen River	

REMARKS:

*Involved the loss of a large number of the planted legal-sized trout apparently due to the great difference in temperatures of the hatchery and river water.

Form NR-8
(Revised)

CULTIVATED CROPS

Refuge Malheur Year 1950

Permittee (If farmed by refuge personnel, so indicate)	Permit No.	Unit or Location	Crops Grown	Ave. Yield per Acre	Permittee's Share		Government's Share or Return				Compensatory Services, or Cash Revenue
							Harvested		Unharvested		
					Acres	Bu. Harvested	Acres	Bu.	Acres	Bu.	
Kern Brothers	Mal 28	Buena Vista	Wheat	25	88	2294	30	765			
		"	Oats	69	80	5497	26	1832			
		"	Barley	25	70	1768	24	587			
		"	Rye	16	15	221	5	74			
Refuge		"	Wheat	40			27	1079	61	2400	
		"	Oats	23			50	1135	97	2000	
		"	Barley	23			114	2602	40	800	
		"	Rye	13			45	596	104	800	
							336				

Summary of Crops Grown:

Crop	Acreage	Permittee's Share		Government's Share				Total Revenue
		Acres	Bushels	Harvested		Unharvested		
				Acres	Bu.	Acres	Bu.	$
Wheat	206	88	2294	57	1844	61	2400	
Barley	248	70	1768	138	3189	40	800	
Oats	253	80	5497	76	2967	97	2000	
Rye	169	15	221	50	670	104	800	
Totals	876	253	9780	321	8670	302	6000	

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS

Cultivated Crops Report Form NR-8 should be prepared on a calendar-year basis for all crops harvested or utilized during the calendar year and submitted with the December 31 refuge report.

Permittee - List each permittee separately. If lands of the refuge are farmed by refuge personnel or hired labor, this should be indicated in the Permittee column.

Permit No. - List the number of the Special Use Permit issued to the individual.

Use or Location - The Unit No. or name specified in the Economic Use Plan should be listed in this column.

Crops Grown - A separate line of the form should be used for each crop grown by each permittee or by refuge personnel. This is important, since if each crop grown by each operator is not specifically enumerated, the report will be of no value for statistical purposes.

Average Yield per Acre - It is important that the average yield per acre of each crop grown by each operator should be shown.

Permittee's Share - Only the number of acres harvested or utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. It is requested that all crops harvested be reduced to bushels wherever possible, or, as in the case with the harvesting of seed such as that of sweet clover, alfalfa, bromegrass, etc., the total harvested crop in pounds may be shown. Timothy, alfalfa, or other hay harvested by the permittee should be shown on Form NR-10 and should not be shown in the Permittee's Share column.

Government's Share or Return - Harvested - Show the number of bushels harvested for the Government and the acreage from which this share is harvested, both for grain raised by refuge personnel and by permittees. Unharvested - show the exact number of acres of crops allowed to remain unharvested as food and cover for wildlife. An estimate of the number of bushels of grain that is available for the wildlife in such unharvested crops should be shown in the Bushels column.

Compensatory Services, or Cash Revenue - Show other services received by the Government in cooperative farming activities, the number of acres of food strips planted for wildlife, the amount of wildlife crops not otherwise reported that are planted by cooperators for the Service, or the cultivation of wildlife plantations. If the permit is on a fee basis, the total cash revenue received by the Service.

3-1570
NR-8a

REFUGE GRAIN REPORT

Refuge Malheur Months of September thru December 1950

(1) VARIETY	(2) ON HAND BEGINNING OF PERIOD	(3) RECEIVED DURING PERIOD	(4) TOTAL	(5) GRAIN DISPOSED OF				(6) ON HAND END OF PERIOD	(7) PROPOSED USE		
				TRANS-FERRED	SEEDED	FED	TOTAL		SEED	FEED	SURP.
Wheat	350	1844	2194	12		380	392	1802	900	600	302
Barley	1040	3189	4229	666		520	1186	3043	1600	1000	443
Oats	328	2967	3295	1140		570	1710	1585	600	800	185
Rye	50	670	720	135			135	585	100	85	400

(8) Indicate shipping or collection points Malheur Refuge

(9) Grain is stored at P-Ranch, Buena Vista, Refuge Hdqtrs., Double O

(10) Remarks

NR-8a REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)--55 lbs., Corn (ear)--70 lbs., Wheat--60 lbs., Barley--50 lbs., Rye--55 lbs., Oats--30 lbs., Soy Beans--60 lbs., Millet--50 lbs., Cowpeas--60 lbs., and Mixed--50 lbs. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

(1) List each type of grain separately: Corn, wheat, proso millet, etc. Include only domestic grains; aquatic and other seeds will be listed on NR-9.

(3) Report all grain received during period from all sources, such as transfer, share-cropping, or harvest from food patches.

(4) A total of Columns 2 and 3.

(6) Column 4 less Column 5.

(7) This is a proposed breakdown by varieties of grain listed in Column 6.

(8) Nearest railroad station for shipping and receiving.

(9) Where stored on refuge: "Headquarters grainary", etc.

(10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

3-1760
Form NR-10
(April 1946)

HAYING AND GRAZING

Refuge Malheur Year 194/ 50

Permittee	Permit No.	Unit or Location	Actual Acreage Utilized	Animal Use Months	Tons of Hay Harvested	Period of Use From - To	Rate	Total Income	Remarks
Ash, Elmer	19065	Qtrs. 11				1/1 - 12/31/50	5.00	60.00	
Ash, Elmer	19075	P-Ranch		261.3		1/1 - 4/8/50	.60	163.80	
Ash, Elmer	MAL 36	P-Ranch		250		9/1 - 12/31/50	.60	150.00	initial pmt.
Anderson, Walter	MAL 86	Buena Vista		896		8/30- 12/31/50	.60	537.60	
Anderson, Howard	MAL 44	" "				8/1 - 12/31/50	.60	30.00	init. pmt.
Benson, George	19056	Qtrs. 7"				1/1 - 12/31/50	7.28	87.36	
Bailey, Tom	19080	P-Ranch		311.9		1/1 - 3/31/50	.60	187.14	
Bailey, Tom	MAL 58	"		517.9		8/1 - 12/31/50	.60	310.74	
Barnes, C. C.	19107	"		300.2		1/1 - 3/31/50	.60	180.12	
Barnes, C. C.	MAL 7	"		1095.8		1/1 - 12/31/50	.60	657.48	
Barnes, C. C.	MAL 79	"		300		8/19- 12/31/50	.60	180.00	
Beckley, Chas. A.	MAL 62	Buena Vista		746.9		9/1 - 12/31/50	.60	448.14	
Bennett, B. A.	MAL 85	Malheur Lk.		267.9		8/30- 12/31/50	.60	160.74	
Brown, Fred L.	19106	P-Ranch		221.7		1/1 - 3/31/50	.60	133.02	
Brown, Fred L.	MAL 78	"		535.8		8/19 - 12/31/50	.60	321.48	
Brown, Glenn N.	MAL 10	Buena Vista		61.1		1/1 - 3/31/50	.60	36.66	
Brown, Glenn N.	MAL 102	"		46.7		11/1 - 12/31/50	.60	28.02	
Breazniak, Wm. J.	MAL 15	Buena Vista		15		1/1 - 1/31/50	.60	9.00	
Breazniak, Wm. J.	MAL 87	"		88.8		9/5 - 12/31/50	.60	28.28	
Burdett, Horace	19073	Malheur Lk.		310.1		1/1 - 3/2/50	.60	186.06	
Burdett, Horace	MAL 33	"		473.2		7/15-12/31/50	.60	283.92	
Barnes, A. J.	19120	"		33.7		1/1 - 3/31/50	.60	20.22	
Barnes, A. J.	MAL 109	"		20		10/31- 12/31/50	.60	12.00	
Cables, Lee	MAL 69	"		1648.6		8/7 - 12/31/50	.60	989.16	
Caldwell, Myrtle	19079	Buena Vista		385.1		1/1 - 3/22/50	.60	231.06	
Caldwell, Myrtle	MAL 65	"		864.7		7/25- 12/31/50	.60	518.82	
Carlon Brothers	19114	Double O		34.9		1/1 - 1/30/50	.60	20.94	

3-1760
Form NR-10
(April 1946)

HAYING AND GRAZING

Refuge Malheur Year 194_/50

Permittee	Permit No.	Unit or Location	Actual Acreage Utilized	Animal Use Months	Tons of Hay Harvested	Period of Use From - To	Rate	Total Income	Remarks
Carlon Brothers	MAL 103	Double O		775.1		10/9 - 12/31/50	.60	465.00	
Catterson, Allan	19063	Malheur Lk		571.7		1/1 - 3/31/50	.60	343.02	
Catterson, Alan	MAL 31	"		410.9		7/15 - 12/31/50	.60	246.54	
Catterson, Gordon	MAL 89	"		136.3		9/1 - 12/31/50	.60	81.78	
Catterson, Jack	MAL 74	"		205.1		8/15 - 12/31/50	.60	123.06	
Cecil, J. C.	MAL 101	Double O		797.5		10/5 - 12/31/50	.60	478.50	
Chamberlin, Don	MAL 24	Qtrs. Kado				4/1 - 5/31/50	5.00	10.00	
Chamberlin, Don	19078	Malheur Lk.		6		1/1 - 2/28/50	.60	3.60	
Chamberlin, Don	MAL 73	"		111.2		8/15 - 12/31/50	.60	66.72	
Chandler, Walter C.	19059	"		18		1/1 - 3/31/50	.60	10.80	
Chandler, Walter C.	MAL 57	"		46.4		7/1 - 12/31/50	.60	27.84	
Church, Harry	MAL 29	"		210		7/1 - 12/31/50	.60	126.00	
Cochran, Craig	19082	"		210		1/1 - 3/31/50	.60	126.00	
Cochran, Craig	MAL 67	"		848.4		8/7 - 12/31/50	.60	509.04	
Cooley, Walter C.	19096	Buena Vista		374.8		1/1 - 3/31/50	.60	224.88	
Cooley, Walter C.	MAL 92	"		1636		9/1 - 12/31/50	.60	981.60	
Critchlow, Howard	19071	P-Ranch		1650.8		1/1 - 4/18/50	.60	990.48	
Critchlow, Howard	MAL 35	"		1410.7		7/15 - 12/31/50	.60	846.42	
Critchlow, Hannah	19069	"				4/1 - 3/31/50		12.50	Farmig
Critchlow, Hannah	MAL 26	"				4/1 - 12/31/50		12.50	Farmig
Crow, John	19058	Malheur Lk.		314.7		1/1 - 5/31/50	.60	188.82	
Crow, John	MAL 34	"		582.8		7/15 - 12/31/50	.60	349.68	
Dickenson, Ashley	MAL 13	"		15.1		1/1 - 3/31/50	.60	9.06	
Davies, J. W. & Son	19081	"		308.4		1/1 - 3/20/50	.60	185.04	
Davies, J. W. & Son	MAL 83	"		1204.9		8/30 - 12/31/50	.60	722.94	
Davies, Matt	19118	"		156		1/1 - 2/28/50	.60	93.60	
Davies, Matt	MAL 71	"		260		8/8 - 12/31/50	.60	156.00	

3-1760
Form NR-10
(April 1946)

HAYING AND GRAZING

Refuge Malheur Year 194/ 50

Permittee	Permit No.	Unit or Location	Actual Acreage Utilized	Animal Use Months	Tons of Hay Harvested	Period of Use From - To	Rate	Total Income	Remarks
Dunn, Sam	MAL 70	Malheur Lk		390.2		8/8 - 10/8/50	.60	234.12	
Dunn, W. F.	19062	"		2665.8		1/1 - 3/31/50	.60	1043.88	
Dunn, W. F.	MAL 38	"		2628.7		7/17 - 12/31/50	.60	1577.22	
Fine, J. B.	MAL 180	Buena Vista		1001		8/19 - 12/31/50	.60	600.60	
Fitchet, Clarence	MAL 68	Malheur Lk		454		8/1 - 12/31/50	.60	272.40	
Frank, A. W.	MAL 30	Frenchglen Store				7/1 - 12/31/50	15.00	90.00	
Gardner, J. F.	MAL 4	P-Ranch		8		1/1 - 2/28/50	4.60	4.80	
Gibson, Stanley	MAL 96	Double O		290.5		8/1 - 12/31/50	.60	150.30	
Gill Cattle Co.	19111	P-Ranch		8402.9		8/1 - 4/23/50	.60	5041.74	
Gill Cattle Co.	MAL 43	"		12953.8		7/18 - 12/31/50	.60	7772.28	
Gill, R. J.	19085	"		300.4		1/1 - 3/31/50	.60	180.84	
Gill, R. J.	MAL 46	"		719.8		7/25 - 12/31/50	.60	431.88	
Griffin, Leslie	19105	Malheur Lk.		85.3		1/1 - 1/31/50	.60	51.18	
Griffin, Leslie	MAL 91	"		166.2		9/5 - 12/31/50	.60	99.72	
Grout, Frank	MAL 104	"		237.3		10/14- 12/31/50	.60	142.38	
Haines, Marcus	19072	Buena Vista		260.3		1/1 - 3/31/50	.60	156.18	
Haines, Marcus	MAL 47	"		601.5		9/1 - 12/31/50	.60	360.90	
Hamilton, Geo. V.	19089	"		60		1/1 - 3/30/50	.60	36.00	
Hamilton, Geo. V.	MAL 61	"		919.1		8/1 - 12/31/50	.60	551.46	
Hayes, M. B.	MAL 20	Malheur Lk.		535		1/1 - 4/18/50	.60	321.00	
Hayes, M. B.	MAL 105	"		83.3		10/19- 12/31/50	.60	50.00	init. pmt.
Hill, Lloyd	19067	Sod House		2121.6		1/1 - 3/31/50	.60	1272.96	
Hill, Lloyd	MAL 53	"		816.6		7/25 - 8/31/50	.60	489.96	
Hill, Lloyd	MAL 54	"		2860.7		7/25 - 12/31/50	.60	1716.42	
Hill, Lyle	19101	"		475.8		1/1 - 3/31/50	.60	285.48	
Hill, Lyle	MAL 55	"		1066.9		7/20 - 12/31/50	.60	640.14	
Hill, Lyle	MAL 106	"		430.8		11/1 - 12/31/50	.60	258.48	

3-1760
Form NR-10
(April 1946)

HAYING AND GRAZING

Refuge Malheur Year 194/50

Permittee	Permit No.	Unit or Location	Actual Acreage Utilized	Animal Use Months	Tons of Hay Harvested	Period of Use From - To	Rate	Total Income	Remarks
Hughet, Albert	MAL 98	Double O		546		8/1 - 12/31/50	.60	327.60	
Hughet, Glenn N.	MAL 19	"		47.1		1/1 - 3/31/50	.60	28.26	
Hughet, Glenn N.	MAL 94	"		496.9		8/1 - 12/31/50	.60	298.14	
Hughet, Lillie Est.	19110	"		783.7		1/1 - 3/31/50	.60	470.22	
Hughet, Louis M.	19109	"		852.4		1/1 - 3/31/50	.60	511.44	
Hughet, Louis M.	MAL 63	"		1780.5		8/1 -12/31/50	.60	1068.30	
Hurlburt, A. A.	MAL 37	"		1280.9		7/17 - 12/31/50	.60	768.54	
Howard, Paul	MAL 14	P-Ranch		42.4		1/1 - 12/31/50	.60	25.44	
Howard, Paul	MAL 27	"		280.9		4/1 - 12/31/50	.60	168.54	
Howard, Paul	50-638	Hotel				1/1 - 12/31/50	25.00	300.00	
Howard, Paul & Jim	MAL 16	P-Ranch		21		1/1 - 3/31/50	.60	12.60	
Hutchinson, J. R.	MAL 42	SodHouse				7/21 - 11/20/50	7.00	28.00	Qtrs.
Hutchinson, R. W.	19104	"		167.5		1/1 - 3/15/50	.60	100.50	
Hutchinson, R. W.	MAL 81	"		288.5		8/21 - 12/31/50	.60	173.10	
Jenkins Brothers	19095	Buena Vista		213.3		1/1 - 2/2/50	.60	127.98	
Jenkins Brothers	MAL 48	"		1030.2		7/25 - 12/31/50	.60	618.12	
Kidwell, Bud	19061	Sod House		186.7		1/1 - 3/31/50	.60	112.02	
Kidwell, Bud	MAL 56	"		408.4		7/24 - 12/31/50	.60	245.04	
Kern Brothers	19112	Buena Vista		950.8		1/1 - 3/31/50	.60	570.48	
Kern Brothers	MAL 40	"		1008		9/1 - 12/31/50	.60	604.80	
Mace, Clarence	MAL 12	"		54		1/1 - 3/31/50	.60	32.40	
McElhone, Frank	MAL 5	P-Ranch		58		1/1 - 3/31/50	.60	34.80	
McEwen, Walter	19088	Sod House		4778.9		1/1 - 3/31/50	.60	2867.34	
McEwen, Walter	MAL 72	"		4190.8		4/1 - 12/31/50	.60	2514.48	
McKee, Carl	MAL 8	Buena Vista		38.8		1/1 - 3/31/50	.60	23.28	
McKee, Carl	MAL 111	"					.60	10.00	init. pmt.
McWilliams, Gordon	MAL 99	"		218.1		9/29 - 12/23/50	.60	130.86	

3-1760
Form NR-10
(April 1946)

HAYING AND GRAZING

Refuge Malheur Year 194 / 50

Permittee	Permit No.	Unit or Location	Actual Acreage Utilized	Animal Use Months	Tons of Hay Harvested	Period of Use From - To	Rate	Total Income	Remarks
Meservey, Kenneth	MAL 90	Sod House				9/1 - 12/31/50	5.00	20.00	Qtrs. No. 5
Miller, Clarence	19119	Buena Vista		1769.2		1/1 - 3/31/50	.60	1061.52	
Miller, Clarence	MAL 49	"		273.7		8/1 - 12/31/50	.60	164.22	
Moon, J. Virgil	MAL 64	Double O		1138.6		8/1 - 11/7/50	.60	683.16	
Munsy, R. D.	19070	Sod House		39.2		1/1 - 3/26/50	.60	23.52	
Munsey, R. D.	MAL 106	"				10/19- 12/31/50	.60	25.00	init. pmt.
Obiague, Peter	MAL 39	Double O				7/17 - 12/31/50		100.00	" "
Opie, Dan	MAL 107	"				10/19- 12/31/50	.60	50.00	" "
Otley, Alberta	19883	Malheur Lk		225		1/1 - 3/31/50	.60	135.00	
Otley, Alberta	MAL 32	"		1000		7/1 - 12/31/50	.60	600.00	
Otley, Homer	MAL 100	"		41.7		8/1 - 12/31/50	.60	25.00	2 "
Parker, Mildred	MAL 97	Double O		147.4		8/1 - 12/31/50	.60	88.44	
Pubols, John	19091	Buena Vista		152.3		1/1 - 3/31/50	.60	91.38	
Pubols, John	MAL 110	"				11/10- 12/31/50	.60	25.00	init. pmt.
Riddle Ranch	MAL 76	Malheur Lk		41.7		8/16 - 12/31/50		25.00	per annum
Riddle Ranch	MAL 77	"		1224.2		8/16 - 12/9/50	.60	734.52	
Ruh Brothers	MAL 50	"		605		7/25 - 12/31/50	.60	363.00	
Smyth, D. H. Jr.	19086	Buena Vista		835.1		1/1 - 3/27/50	.60	501.06	
Smyth, D. H. Jr.	MAL 51	"		661.9		9/1 - 12/31/50	.60	397.14	
Thompson, Lester	MAL 84	Malheur Lk		123.7		8/30 - 11/9/50	.60	74.22	
Thomson Brothers	MAL 73	"		625.6		8/15 - 12/31/50	.60	375.36	
Thompson, Leon	19094	Buena Vista		297.4		1/1 - 3/21/50	.60	178.44	
Thompson, Leon	MAL 45	"		552.6		9/1 - 12/31/50	.60	331.56	
Vickers, J. E.	MAL 41	Malheur Lk		41.7		7/17 - 12/31/50	.60	25.00	init. pmt.
Vite, Geo.	MAL 193	"		43.2		9/12 - 12/31/50	.60	25.92	
Witzel, Dell	19087	Buena Vista		214.6		1/1 - 2/7/50	.60	128.76	

3-1760
Form NR-10
(April 1946)

HAYING AND GRAZING

Refuge Malheur Year 194 50

Permittee	Permit No.	Unit or Location	Actual Acreage Utilized	Animal Use Months	Tons of Hay Harvested	Period of Use From - To	Rate	Total Income	Remarks
Witzel, Dell	MAL 52	Buena Vista		574.6		7/25 - 12/31/50	.60	344.76	
Witzel, Fred	MAL 6	P-Ranch		3318.7		1/1 - 12/31/50	.60	1991.22	
Younger, John	MAL 123	Qtrs. #14				2/16 - 4/16/50	5.46	10.92	
Lambert, Wm.	MAL 25	Frenchglen Store				1/1 - 6/30/50		75.00	
Gibson, Lynn	MAL 21	Sod House		39.5		1/21 - 3/31/50	.60	23.70	

Totals:

Acreage grazed 73,078** Animal use months 95,617.4 Total income Grazing 56,740.67

Initial payments 360.00

Acreage cut for hay 14,385* Tons of hay cut Total income Haying

Misc. & Qtrs. 445.36

Total 57,546.02

**Includes estimated 20,000 acres grazing on Malheur Lake Unit

* Used ~~largely~~ as bunched & stacked hay on AUM basis.